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THE ANTHROPOLOGY OF BADEN.

Zur Anthropologie der Badener; Bericht über die von anthropologischen Kommission des Karlsruher Altertumsvereins an Wehrpflichtigen und Mittelschülern vorgenommenen Untersuchungen. By Otto Ammon. Pp. xvi + 707. Maps 15. (Jena: Gustav Fischer, 1899.)

FOR many years the distinguished worker, Dr. Ammon, has been conducting an anthropological survey of the Grand-duchy of Baden in such an exhaustive and detailed manner as cannot fail to excite the admiration of all interested in this branch of science. A considerable proportion of his investigations has been already published and incorporated in anthropological text-books; but the present bulky volume gives the whole of his work in collected form, and embodies such generalisations as he considers can at present be safely attempted. For the final bearings of these investigations on the history and evolution of this portion of the Caucasian race, Dr. Ammon states, however, that further observations are necessary both in his own and in neighbouring countries. As a monument of patient research, many of the fruits of which others will pluck, the volume before us reflects the highest credit on the author and his fellow-worker, Dr. Wilser.

The observations have been carried out on recruits and school-children; the two series being kept quite distinct from one another. The country has been mapped out into districts, which were assiduously worked from 1887 to 1894, three out of the four chief districts having been undertaken by Dr. Ammon himself, while the fourth has fallen to the lot of Dr. Wilser. The number of individuals (which is very great) examined in each of the four districts is clearly indicated on the first of the admirable series of maps, which render both the physical features of the country and the results of the survey conspicuous at a glance. In view of the general gradual numerical diminution of blonds and the increase of brunettes as we pass from North to South Germany, Baden, as forming a long narrow strip running from the south towards the centre of the German empire, is admirably circumstanced to display the development of this law in the southern provinces.

In addition to describing the ordinary physical features of the country, the geological structure is likewise taken into account; and the effects of all natural surroundings on the population are thus considered in full detail. To enumerate all the anthropological features which have entered into the scheme of survey would be wearisome; and it must suffice to say that bodily stature (subdivided into total length, sitting length, and leg-length), the proportions of the length to the breadth of the head, the colour of the eyes and hair, and the development of hair on parts of the person other than the scalp, are all taken into consideration. Especial attention is directed to the difference in the anthropological features of the inhabitants of the rural and urban districts; and, above all, to the changes in the population of the latter induced by immigration from the former. In these investigations,

Dr. Ammon lays claim to having founded a new branch of anthropology.

Seeing that to render adequate justice to the scope of the work would require a considerable portion of a number of NATURE, it will be advisable to concentrate attention on a few features. Among these, the relative prevalence of long-heads and round-heads, of blonds and brunettes, in different districts is perhaps the most generally interesting.

At the commencement of the second section of the work we find some theoretical observations on the three "primitive" types of man met with in Europe. In common with many other modern anthropologists, such as Ripley and Sergi, the author recognises, firstly, the Mediterranean long-heads, of medium or small stature, with dark eyes, hair, and skin. Secondly, the North European long-heads, of tall stature, with blue eyes, blond hair, and fair skin. And, thirdly, the Alpine round-heads, whose stature is medium, with dark eyes, hair, and skin. And here it is important to notice that the author speaks of these simply as *types*, in contradistinction to *races*. He further observes that, owing to crossing, neither of the three types are common in their original purity in any district. In Baden itself, the population at the present day seems chiefly due to a mixture of the fair North European long-heads with the dark Alpine round-heads, the dark Mediterranean long-heads having failed to penetrate so far north in any great numbers.

The following table shows the number of individuals of each type met with among different classes of the population:

| Type. | Rural districts. | Immigrants. | | Town-born. | |
|--------------------|------------------|--------------|--------------|--------------|--------------|
| | | Small towns. | Large towns. | Small towns. | Large towns. |
| North European ... | 146 | 4 | 11 | 27 | 15 |
| Alpine ... | 26 | 3 | 5 | 3 | 1 |
| Mediterranean ... | 9 | 0 | 0 | 0 | 0½ |

The percentage from these works out as below:—

| | | | | | |
|--------------------|------|------|------|------|------|
| North European ... | 1.45 | 0.77 | 1.25 | 1.94 | 2.54 |
| Alpine ... | 0.39 | 0.93 | 0.91 | 0.35 | 0.27 |
| Mediterranean ... | 0.09 | 0 | 0 | 0 | 0.08 |

From this we see that, while among the immigrants the North European type is rarer in the small and the large cities than in the rural population, among the town-bred the percentage rises so as to exceed that of the rural districts, this being most markedly the case in the large cities, where we have 2.54 per cent., against 1.45 in the country districts.

Respecting the Alpine type, we find the immigrants into small towns standing at 0.93 per cent., and at 0.91 in the larger cities, as against 0.39 in the rural districts; whereas in the town-bred class the percentage is less than in the country districts, the diminution being most marked in the case of large cities.

Here, therefore, we have evidence that the blond long-heads tend to gravitate towards the large cities, where they flourish; and that while there is also a large immigration of the dark round-heads, yet that these tend to die out in their urban homes. Certain details are also given with regard to the position occupied by the dark round-heads among their fellow-students in the schools; but into these it is impossible to enter on this occasion.

To a certain degree, these results accord with those arrived at by Monsieur de Lapouge in France, that anthropologist contending that the enterprising, restless, long-heads migrate in disproportionate numbers from the rural districts to the cities, where, however, they eventually tend to die out. As regards this dying-out, so far as the blond long-heads are concerned, Dr. Ammon's figures do not appear to accord with the French conclusions. And having regard to the objections which have been urged against the latter, our author is wise in stating (in the preface) the necessity of further investigations before definite deductions are attempted. He, however, thinks it quite possible that a "selection of long-heads" may be taking place; and expresses the "pious wish" that such may prove to be the case.

As regards the contention of the French investigator that the dark Mediterranean long-heads are the type best adapted for an urban existence, where they choke out the long-headed immigrants, Dr. Ammon¹ considers that this is not supported by the results of his own work; this showing a total absence of the Mediterranean type in three out of the four urban districts, while in the fourth they are considerably less numerous than in the rural districts.

Pursuing the same subject, we find, in the fourteenth chapter of the second part, Dr. Ammon giving a series of interesting details with regard to the differences of skull-proportion and hair-colour between the sons of the immigrants into the towns and those of their native-bred inhabitants. From these it appears that in the smaller towns the sons of town-bred people exceed those of immigrants both in stature, sitting-height, and length of leg, as well as in the leg-index. In large cities, on the other hand, while the first three factors in the former show a similar increase over the country-breds, the leg-index is less. From the country population to the immigrants, from the latter to the sons of immigrants, and from these again to the sons of the city-dwellers there is an increase in the number of long-heads, with a proportionate diminution of round-heads.

In both generations of the town-breds the relative number of blue eyes at first increases and then diminishes in cities of all sizes; in small towns the number of persons with blond hair does the same, while in large towns it remains constant. In the town generation the North European and the Alpine types tend to converge, and the Mediterranean type to disappear. It is in consequence of these changes that a preponderance of blond persons is not observable among the recruits drawn from towns.

Although the above are only a few of the interesting results of the author's investigations, it will be evident that they are of the utmost importance in regard to current French theories as to the general inferiority of the round-heads, and their absorption in cities of the superior long-heads. But, as even the mental superiority of the latter over the former type is by no means admitted by all anthropologists, it is evident that we are at present only on the very threshold of studies of this nature. That results likely to be of real service in connection with the problems presented by urban and rural

¹ Page 448. It is a little difficult to reconcile Lapouge's statement as to the dying-out of long-heads in cities (see Keane's "Man, Past and Present," p. 520) with his contention that the Mediterranean long-heads show a special suitability for such an existence.

populations, especially those connected with the present preponderating increase of the former, will ensue from the steady pursuit of such studies, can but be the earnest hope of all those interested (and who is not?) in the future of the higher branches of the human race. R. L.

LIMNOLOGY.

The Microscopy of Drinking-Water. By G. C. Whipple, Biologist and Director of Mount Prospect Laboratory. Pp. xii + 300, and plates. (Brooklyn, N.Y.: Wiley and Sons. London: Chapman and Hall, Ltd., 1899.)

Examination of Water (Chemical and Bacteriological). By W. P. Mason, Professor of Chemistry, Rensselaer Polytechnic. Pp. 135. (New York: Wiley and Sons. London: Chapman and Hall, Ltd., 1899.)

THIS is an example of a class of books in the production of which the Americans are bidding fair to take a lead, the type of book which may be termed the popular practical scientific manual, where the limitation of the subject-matter and the thoroughness of treatment aimed at are worthy of the German, but devoid of that hair-splitting exactness which so often leads to obscurity; while the general style and breadth of treatment are essentially English, and at the same time are saved from the superficiality too common in native technical treatises, by the industry and original ability of the energetic American. At the same time, the present work is not devoid of a certain diffuseness, which we think is referable to the author's enthusiasm leading him into disquisitions too long for the proper purpose of the book, but which is possibly the more marked to us because he is writing about American waters in particular, and about conditions not known in England.

The title may seem to many to claim too much; for Mr. Whipple puts aside at the outset all that relates to bacteria, and takes a very wide view of "drinking-water." He regards the subject of the examination of water as divisible into

- (1) Physical examination.
- (2) Biological examination.
 - (1) Microscopical.
 - (2) Bacteriological.
- (3) Chemical examination.

A mode of classification which lands him in some inconsistencies—for some Schizomycetes are dealt with later on—and would vitiate the work if it were not clearly set forth that he is concerned solely with that part of the microscopical examination of water which is not bacteriological in the accepted sense of the word, and comes under the head of Limnology, dealing with those organisms which can be filtered out by means of fine-meshed nets or coarse filters incapable of keeping back water-bacteria.

The position reminds us of Miss Kingsley's diatribe against the utility of filters in West Africa.

"A good filter is a very fine thing for clearing drinking water of hippopotami, crocodiles, water snakes, cat-fish, &c. . . ; but if you think it is going to stop back the microbe of marsh-fever—my good sir, you are mistaken."

Mr. Whipple, however, does not attempt to stop the smaller organisms by his filters, but only deals with the